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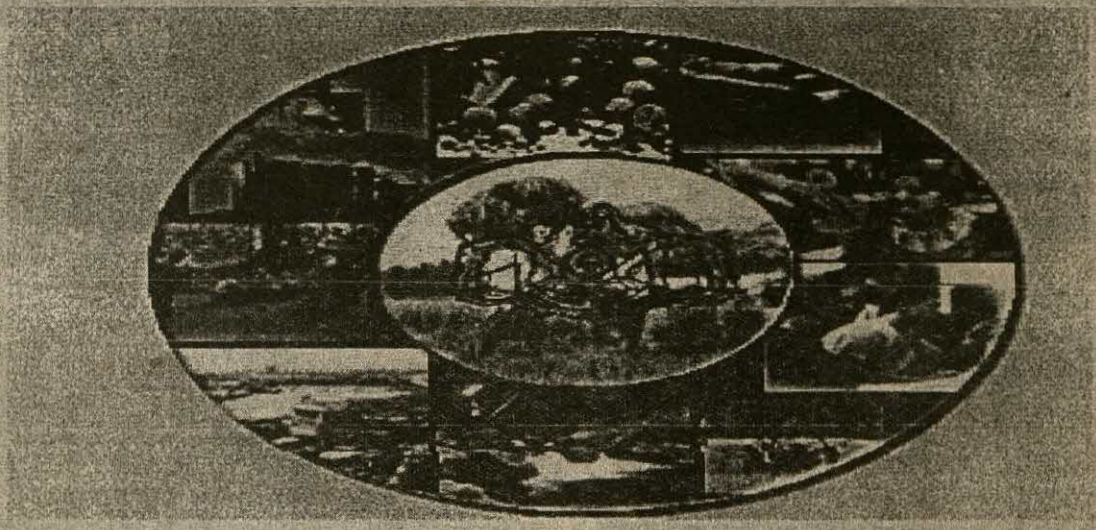

Inside this issue

Department of Economics & Statistics
Government of Kerala

5&6

From Editors Desk

Besides statistical presentations, ecostat news has been highlighting meaningful discussions on economic issues of current interest. "Vision Kerala 2025" document reproduced in this issue provides a SWOT analysis of Kerala economy revealing the new development agenda of the state.

The lead article written by P.C. Jain gives an indepth understanding of the concept of "monitoring & evaluation" in implementation of development programmes.

The report of Sr. M.A. Raveendran on C.R. Rao, an eminent statistician of India, gives much insight into the process of statistical thinking.

This issue of ecostat also contains latest data on poverty indicators in the state and consumer price index for December 2003.

It is hoped that contents of ecostat news in this issue would be of some use to planners and data users.

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M.R. Balakrishnan
Director & Chief Editor

Contents

Projected Population by Sex (2001-2026)

(unit: '000)

Sl No	Year	India			Kerala		
		Persons	Males	Females	Persons	Males	Females
1	2001	1037952	536609	501343	31968	15515	16453
2	2002	1055051	545420	509631	32357	15714	16643
3	2003	1072580	554297	518283	32711	15888	16823
4	2004	1089915	563079	526836	33072	16067	17005
5	2005	1107064	571756	535307	33425	16242	17183
6	2006	1123993	580304	543689	33763	16408	17355
7	2007	1140715	588737	551978	34094	16570	17524
8	2008	1157245	597061	560184	34422	16731	17691
9	2009	1173458	605428	568030	34741	16886	17855
10	2010	1189793	613411	576382	35049	17038	18011
11	2011	1205874	621461	584413	35345	17182	18163
12	2012	1221839	629433	592406	35631	17321	18310
13	2013	1237638	637301	600337	35908	17455	18453
14	2014	1253748	645321	608427	36188	17591	18597
15	2015	1268576	652670	615906	36429	17706	18723
16	2016	1284216	660425	623791	36688	17831	18857
17	2017	1298982	667732	631250	36922	17942	18980
18	2018	1313035	674679	638356	37132	18041	19091
19	2019	1327318	681712	645606	37346	18142	19204
20	2020	1341255	688543	652712	37551	18238	19313
21	2021	1354852	695170	659682	37749	18331	19418
22	2022	1368132	701614	666518	37938	18419	19519
23	2023	1381090	707868	673222	38118	18502	19616
24	2024	1393667	713896	679771	38290	18581	19709
25	2025	1405833	719665	686168	38455	18656	19799
26	2026	1417888	725353	692535	38619	18731	19888

Source: Central Statistical Organisation.

First phase of central database for investors getting ready

The fraudsters among the intermediaries and investors will have a hard time once the central database of market participants and investors being prepared by Sebi through National Securities Depository Ltd (NSDL) comes into effect.

This database of every person with unique identification number and fingerprints will enable Sebi to easily track any unscrupulous depository participant or investor.

It is called MAPIN Database and requires not one but fingerprints of every person.

The first phase of the programme, which was launched by Sebi and NSDL in the last week of November, is actively progressing.

The basic intention of the process is to develop an inventory of market participants and investors and set up a standard for client code.

Under this phase, intermediaries registered with Sebi and their related persons have to obtain the unique identification numbers during the period from December 1, 2003 to March 31, 2004.

They will not be allowed to transact business without the number after the period.

The database of the investors will be prepared from June, 2004. Being an elaborate process, it could take more time, according to sources.

Five companies namely Integrated Enterprises (India) Ltd, Geojit Securities Ltd, Karvy Consultants Ltd, CMC Ltd and Alankit Assignments Ltd located at different parts of the country have been selected for preparing the database.

The identification number under MAPIN database is permanent and does not change even in the case of individuals who change the organisation they are associated with.

After the build-up of data, NSDL will be able to provide investors the basic information of intermediaries as to whether they are facing any disciplinary action. Similarly, an intermediary can verify the client identity with MAPIN database.

Sebi will be able to update regulatory record of the registered entities in the database so that this information is available for public information through Internet.

The brokers and depository participants will be allowed to update the address of the investors in the database.

The process of allotting identification number through identity cards began on Dec 1.

Source: The New Indian Express, Dec. 13.

Indian banks need to firm up global growth plans: Experts

Indian banking entities have to firm up business plans for global expansion while the sector needs consolidation, including mergers and acquisitions, to exploit growth opportunities in retail and corporate segment, banking experts said today.

Besides catering to NRIs, Indian companies are expanding abroad, which need financial services, and there was no other option but to work out business plans for international expansion, State Bank of India chairman A.K. Purwar said while addressing bank economists conference here today.

SBI has presence in 28 countries with 58 branches but it was not sufficient as a support base and about six Indian banks should emerge to look to outside business, Purwar said.

These entities need internal resilience to expand and benefit from opportunities and for this consolidation of operations was a must, he added.

Purwar said the Union Government and Reserve Bank of India were working on guidelines to facilitate consolidation in the Indian banking system.

ICICI Bank managing director and CEO K.V. Kamath said corporates were approaching with investment plans and banks expect credit lending to this segment to pick up 12 months from now.

Banks would have to grapple with challenge of size and costs while managing business expansion, he said adding banks should facilitate two-way trade as part of plans to grow international business, Kamath said.

He said the bank plans to have presence in six countries this year and in 10-15 more by next year.

Referring to recent move by HSBC to pick up 20 percent stake in UTI Bank Ltd, Kamath said "We are witnessing some initial activity and foreign invesument in Indian banks could be considered serious only when someone comes up with over $500 million on the table for acquisitions".

ICICI Bank, which acquired NBFCs like ITC Finance and Bank of Madura, was not currentlylooking at fresh acquisitions for growth, Kamath said.

Leo Puri, Principal of Mckinsey and company, the global consulting firm, said that Indian Banks would have to face hurdles in internationalising their operations because of low capital base. "It is up to the policy makers to express clearly as how to recapitalise the banking system to help them grow to global standards", he said.

Though the Indian banks reduced their bad exposure to a great extent as compared to other nations, their exposure in terms of lending to consumer as well as housing is still considered to be very low as compared to some other countries in this region, he said. In housing, Indian banks have a penetration of only 2 percent of the GDP as compared to 68 pc of banks in Singapore.

Puri also observed that there is growing gap of modernisation and expansion between public and private sector banks in India and this might lead to certain disparities in moving global operations.

Central Bank of India CMD Dalbir Singh said that there was a need to adopt an appropriate mindset and approach to meet the emerging challenges in the banking sector. In the next 5 to 10 years, Indian banks would have to face greater challenges in consumer business, treasury management, higher risk taking attitude and generate confidence among corporate clients, he said.

'Capital Inflows from Abroad can Destabilise Economy'

There is much hoopla over foreign capital inflows into the country. Foreign institutional investors (FIIs) have poured around $14 billion so far in the calendar year. Most commentators in the media have taken this as a sign of the confidence of global investing community in the Indian economy. Yet, there is a contrarian view that warns against the destablising impact of the financial flows into the economy via distortions in the monetary, fiscal and trade channels. It is to these destablising aspects of financial flows that the eminent economist, Dr. Philip Nachane alerted the optimists in his address 'Foreign inflows and their impact on the economy'. He was speaking at a seminar, 'The facets of Indian economy' organised by the Akbar Peerbhoy College of Commerce and Economics, Mumbai, on August 30.

He disputed the Robichek Lawson thesis that says trade deficits are not to worry about as these do not spill over into fiscal deficits. But Dr. Nachane showed how in the UK in 1992 such flows worsened fiscal deficits and triggered off capital flight to lead to the collapse of the Exchange Rate Mechanism (ERM). Later Mexico in 1994 suffered more or less the same fate. He also pointed out limits to sterilisation of flows by the Reserve Bank of India without distorting exchange rate and inflation rate. His objection to financial capital flow into the country rests on the fact that such flows tend to destabilise forex market operations through currency appreciation and interest rate mechanism.

A trade-off between the two leads to instability in interest rate. As he observed, "With foreign capital inflows the task of maintaining the nominal exchange rate within a corridor typically leads to an unacceptable instability in the short-term interest rates which is likely to jeopardise the stability of the financial market".

Rajendra Singh, Principal Secretary, Maharashtra Government pointed out that despite hard times, Maharashtra fared better than most other states in terms of major economic and social criteria. Dr. Ishaq Jamkhanwala warned against the destabilising effects of fiscal profligacy and called for restraints on unproductive expenditure at both, national as well as states levels. He also appealed to politicians to give due thought to this aspect. Dr. D.K. Bhatia former advisor to RBI dealt in detail with financial and monetary policies with emphasis on inflation targeting, bank supervision etc.

Source: Economic Times, Sept. 1.

2 lakh house holds in BPL list

Out of the 57,28,291 households in the state, 10.2 lakh have been identified as below the poverty line eligible to be assisted by various anti-poverty programmes of the Central Rural Development Ministry, as per the first-ever BPL census conducted in the State based on relative deprivation.

Unlike the previous BPL census which used income and expenditure for identifying the rural poor, the methodology used by the current census was score-based ranking of socio-economic indicators.

Similarly the 'exclusion criteria' has not been adopted in the current census as in the case of previous BPL censuses in 1992 and 1997 which excluded those above a particular income ceiling from the BPL population.

In the current census, the entire rural population has been graded on the basis of socio-economic indicators.

The census, jointly funded by the Central Government and the Asian Development Bank, was carried out by the State Rural Development Department.

The profile of the rural Kerala as presented in the census will be considered as the database for assessing area-specific and people-specific requirements and for planning in rural Kerala.

The Ministry would provide 'BPL Cards' to all the BPL households identified in this census which would form the basis for targeting beneficiaries under the welfare programmes of different Central Ministries.

The cut-off line was fixed as per the directive of the Central Government that the number of persons below the BPL must be in tune with the findings of the National Sample Survey Organisation (NSSO) survey on consumer expenditure conducted in 1999-2000. But, the State has the right to fix its own cut-off line for identifying beneficiaries for the State-sponsored poverty eradication programmes.

As per the present census, the rural households in the State will be categorised into 'very poor', 'poor', 'not-so-poor' and 'non-poor' on the basis of relative deprivation.

The 13 indicators used in the survey, as suggested by the Central Government, were 'size of operational holding of land', 'type of house', 'availability of clothing', 'food security', 'sanitation', 'ownership of consumer durable', 'literacy status', 'status of household labour force', 'means of livelihood', 'education status of children', 'nature of debt', 'reason for migration', and 'preference of Government assistance'.

In addition, the State Government has included some State specific indices like computer literacy, employment registration, infant mortality, school dropouts, debts, and membership in Government schemes like Kudumbasree.

The scores of each and every household in a village will be displayed at a prominent place in the village to ensure transparency and to reduce the possibility of errors.

The Kudumbasree has been entrusted with the digitisation of the data collected in the census. Once that is completed, the Planning Board will carry out the validation and updating of data collected.

Once the BPL list is approved by the State, no addition may be made in the list till the results of a subsequent BPL census are available.

Source: The New Indian Express, January 11,2004.

Food expenditure on a decline: NSSO

The average monthly per capita consumption expenditure for urban and rural areas stood at Rs. 933 and Rs. 498 and the share of food expenditure was on the decline during 2001-02.

The National Sample Survey Organisation report 'Household consumer expenditure and employment-unemployment situation in India 2001-02', also found that the average expenditure was 87 percent higher in the urban areas as compared to rural areas.

Interestingly, the food expenditure in the monthly per capita consumption expenditure for the rural and urban population declined to 56 percent and 44 percent in 2001-02 as compared to 64 and 56 percent respectively in the year-ago period.

The report said 43 percent of the rural population were employed and 36 percent of the urbanites had jobs.

Of the Rs 498 average monthly per capita consumption expenditure in rural areas, as much as Rs 276 went for food and the remaining Rs 222 for the non-food.

For rural India, food expenditure included Rs 96 for cereals, Rs 93 for milk, milk products, vegetables and edible oils.

Source: The Indian Express, Dec 18, 2003.

Economy has enough resilience to absorb oil price shock: Reddy

Reserve Bank of India Governor Y.V. Reddy dispelled doubts over Indian economy's preparedness to meet the oil price increase and said it had enough resilience to absorb the shock.

"The economy has enough resilience, the system has enough resilience. We have built mechanisms for absorbing such shocks, even though this is not much of a shock," Reddy told reporters after the RBI board meeting here on Thursday. He was answering to reporters queries on whether inflation is a concern and whether the RBI will change its outlook in the context of recent rise in petroleum prices.

He said in spite of the recent increase in petrol and diesel prices, there was no need to revisit the inflation issue.

"Our own record in the last few years shows that the economy has very successfully absorbed such oil price increases with virtually no disruption. We are still confident that we will be able to absorb that and as of now, considering the current outlook, there is no need to revisit inflation issue," Reddy said.

He said RBI's inflation projection as stated in the November 3 mid-term credit policy review remained unchanged. "Our inflation assumptions for the current year remains what has been announced on November 3. But we are keeping a close watch," he added.

State-owned oil companies had earlier this week increased the retail prices of petrol and diesel by about Re 1 per litre.

The increase is expected to exert an upward pressure on inflation, which has already been moving up sharply in recent weeks.

According to the latest available data, for the weekended November 29, the annual inflation based on Wholesale Price Index rose to 5.25 percent from 5.24 percent in the previous week.

Reddy's remarks had an immediate impact on the Government bond prices as they extended their gains.

Source: The New Indian Express, Dec 19, 2003.

Vision Kerala – 2025
A new development agenda

Every country needs a vision, which stirs the imagination and motivates all segments of society to greater effort for further development. It is an essential step in building a political consensus on a broad national development strategy that encompasses the roles and responsibilities of different sections in the economy, such as governments at various layers, private sector, people's organisations etc. The planning Commission Committee on Vision 2020 has already prepared a Vision Document for the country. States like Andhra Pradesh, Assam, Chattisgarh, and Jharkhand have also prepared such documents. By taking the spirit of the honorable President's concept Kerala State Planning Board has also initiated the preparation of a perspective plan for 2025.

Kerala's development experience poses an interesting riddle to economists world over and it is a stark reality that no other single state in any country received the rare privilege of being praised and quoted frequently in international development circles; the latest in the World Development Report 2003. However, since the late 1970s many scholars and activists within Kerala as well as outside have been sounding an alarm: that is the Kerala model moving towards a crisis. This raises the question of sustainability of the Kerala model to face the real situations in this dynamic world. Kerala was a forerunner in the development of physical and social infrastructure, and human development, but

was lagging behind in economic growth and employment. Kerala is unsuccessful in transforming the leverages attained under the social service sectors to the productive sector for the overall development.

Kerala could not transform its high social standards to the forces of production. Our development planning over the last five decades could not also make significant impact on such a transformation. While reviewing the development pattern of the State over the last couple of decades it could be seen that the major glut in the smooth and balanced development of the State economy was mainly lack of a perspective plan with a vision on the part of planners, policy makers, administrators, as well as politicians and academicians. Countries worldwide have taken strong initiatives in breaking their developmental bottlenecks with a long term perspective. Major attempt have not yet been made to remodel the State economy to cater the needs of the people at both the ends of the income ladder including the middle income class, under the globalised regime.

Our honorable President Dr. A.P.J. Abdul Kalam's concept of 'India Vision-2020' has already triggered a new discipline of development waves around nook and corner of the country. It is not too late for us to look into this matter by taking advantage of the already developed service sectors. The 'Kerala Vision 2025' is not only an intervention at the department and grass root levels but also a mission that thrives for overall development of the State economy by making positive changes in strategic areas.

Forecasted Production Trends of Important Crops in Kerala

Crops	Production (in Tonnes)	
	2001-02	2020-21
Paddy	703504	331619
Coconut*	5479	6587
Arecanut*	16687	18543
Cashew	65867	68620
Pepper	58240	151879
Coffee	66690	304685
Tapioca	2455880	1812391
Rubber	580350	954840
Tea	66090	60831

** - Production in million nuts*

The Vision

Our vision of Kerala's future should be both comprehensive and harmonious and it should encompass all the myriad aspects that constitute the life of Keralites. It must be based on an objective assessment of facts and a realistic appraisal of possibilities, yet it must raise beyond the limitations of past trends, immediate preoccupations and pressing challenges to perceive the emerging opportunities and concealed potentials. The ultimate goal of the 'Vision 2025' is to make the State economy a fully developed one by 2025 or if earlier. To achieve this, each rupee spared by the Government need to be monitored for the extent of actuation on both capital mobilisation as well as the socio-economic promotion. It requires a 'circulation tracing' of the various sectors and subsectors.

The basic feature of Kerala development model is an unbalanced development pattern, with advanced demographic/ social service sectors and underdeveloped production sectors. The ultimate mission of Kerala vision 2025 is to make all sectors and subsectors to a fully progressed one by 2025 to cater the needs and aspirations of the then society. Such a long-term perspective requires a well-planned development approach with rationally targeted goals and suitable strategies including contingency plans. One of the prime steps to be taken in the formulation of Vision 2025 is the setting up of need and capacity based targets for AD 2025. such long-term targets are to be divided into short periods. This kind of stratification helps in necessary mid term appraisals at regular intervals. While setting targets all development indicators are to be quantified with sub-sector break ups.

SWOT Analysis

The overall vision for 2025 is to be streamlined in such a manner that each and every sector should be given proper attention. Setting up of goals, targets and strategy in each sector is to be supplemented by contingency plans. The prime issue to be tackled in this endeavour is none other than proper utilisation of natural and human resources. Revision and modification of existing mode of operations through interventions and application of innovative and modern technologies are warranted in each and every line of departments. Rather than sectoral interventions major policy changes are to be ensured in following areas.

- Employment and poverty,
- Regional disparity and backwardness.
- Financing the perspective plan,
- Policy and programme implementation, and
- Technological changes.

Before embarking on a vision exercise it is important to assess the State's potential in terms of its inherent strengths and weaknesses. The SWOT analysis presented herein is not intended to be exhaustive. However, it is indicative of some of the primary issues that the State will need to content with, going forward.

Major Targets

Development parameters	India		Kerala
	2002	2020	2020
Percentage of people below poverty line	26.0	13.0	12.72
Male adult literacy rate (%)	68.0	96.0	94.2
Female adult literacy rate (%)	44.0	94.0	87.9
Public expenditure on education (% of GNP)	3.2	4.9	3.96
Life expectancy at birth (Years)	64.0	69.0	72.0
Infant mortality rate (per 1000 live births)	71.0	22.5	16
Public expenditure on health (% of GNP)	0.8	3.4	0.85
Telephones (per 1000 population)	34.0	203.0	85.0
Sectoral compositions GDP (%)			
a) Agriculture	28.0	6.0	24.5
b) Industry	26.0	34.0	22.0
c) Services	46.0	60.0	53.5

Strength

- Bio-wealth (Micro organisms to the plant and animal kingdom).

  The Western Ghats is one of the 25 ecological hot spots of the World, just 8 degrees away from the equator, the forest of Kerala are known for their rich bio-diversity and endemism of many species. The 'biomass wealth of Kerala includes locational specific resources such as flora and fauna, nutrient rich soil. Rainfall (3000 mm) and water resources round the year bright sunlight, hills, ocean, and beaches etc. Protection, production, processing, and marketing of the bio wealth in the form of agro-related activities is one of the potential strengths of the State. Bio wealth to Kerala is just like petroleum reserves to Gulf countries. Hypothetical zero intervention by mankind in this fertile land will make it full of bio-reserves including plants and animals within couple of years.
- The infrastructure strength included a number of airports, harbours, better transportation and communication networks etc. Road transportation networks in Kerala is one of the best in the country. At the same time Kerala is a forerunner in the information communication technology.
- Human resources
- Kerala is well known for its knowledge society (high levels of literacy) and other demographic/ health gains. Skilled manpower and general English education of the work force make the human resources internationally competitive.
- Non Resident Indian Population

The NRIs (numbering 13.86 lakhs) constitute around 4.4 percent of the Kerala population and the people working abroad amounts to 10 percent of workforce of Kerala. At the same time NRI remittances constituted 22 percent of the State Income and 179 percent of value added in manufacturing.

Weakness

- One of the serious locational disadvantages of Kerala is its poorly endowed natural energy resources such as petroleum, coal etc.
- Lack of fine tuning over the years make the system and in particular the governance of low quality that is reflected through the service delivery.
- Low productivity of the production sector affects their sustenance.
- The quality of education system existing in the State is not of competitive in international standards.

Opportunity

- One of the strengths as well as the opportunities is in the information communication technology.
- Telemedicine has to play an important role in Kerala.
- As discussed earlier infrastructure strength including transportation and communication networks including IT has immense opportunities in making Kerala development destination.
- One of the traditional strength of Kerala in the health sector is Ayurveda, which has to play pivotal role in the new era.
- The God's own country's natural beauty as could be seen in the eastern mountains, western beaches and the backwaters along with rich bio-wealth and cultural heritage make Kerala a place of immense potentiality in the tourism sector.
- Kerala is an investor friendly economy.
- Biotechnology and organic farming.
- Modernisation of traditional industries and handicrafts.

Threats

- Increasing numbers of population (even though the growth rate is falling) and its pressure on scarce land resources will impede development initiatives to a grater extent. At the same time demographic transitions in the form of aging population and the resultant pressure on working population will create a development dilemma.
- Major crops produced in the State, which are facing international competition included spices and plantation crops and in particular from Indonesia, Malaysia, Thailand, Philippines, Sri Lanka, Brazil, and Guatemala.
- Declining opportunities for migration in the Middle East will affect the State's labour class and also the foreign remittances.
- Environmental problems including deforestation, destruction of wetland ecosystems and water bodies, and pollution will affect the sustainability of development efforts.
- Consumer market.

While framing a vision document for 25 years the 'Business as Usual Approach (BAU) is not the main strategy but has been the 'Best Case Scenario' (BCS) approach. For which the efficiency of service sectors and the productivity of production sectors are to be at least doubled.

Source: Kerala Calling, 2003.

The first scientific census of Travancore

The first census in the State of Travancore was taken in 1875 followed by another in 1881. Even though five censuses were taken, the first census, which was synchronous through out the State as regards to both time and date, was the census of 1921, which was the sixth of its kind in the state.

During the last five censuses the population count was taken at three different times.

1. Travelers at one time.
2. People at houses and rest houses at another time.
3. People at hospitals, jails etc. at another time.

This was pointed out as a major defect of the censuses. So with the sanction of the Census Commissioner for India the time for the population

count in the sixth census was made between 7 a.m and 9 a.m in the morning of March 18, 1921. So we can say that this was the first census which started on the same date and time through out the state and coincided with the rest of the country.

Regarding the censuses of 1921 there are so many points that have to be mentioned to consider it superior and systematic to the other five censuses.

In the previous censuses only 19 municipal towns were enumerated. But in 1921, 19 other places declared as towns under Police Regulation were also taken into account separately.

In the last two censuses the *Kara* or the "Residential Village" was taken as the unit for census operations both in rural areas and towns. But each *Kara* boundaries were not properly defined or surveyed. Also the local villagers knowledge of their "Kara" boundaries was found to be conflicting because of variations observed in the number of *Karas* from census to census. But for want of a better unit this process had been continued till the divisions of the *Karas* into smaller areas was accomplished in the next settlement. In municipal towns the *Kara* was the unit for census operations in the early five censuses.

But in 1921 well-defined 'wards' into which the towns have been divided for administrative purposes were taken as units. Unlike the previous censuses, the presidents of the municipal councils were appointed as charge superintendents in the 1921 census.

Two agencies were employed for house numbering namely the Village Revenue Officers for rural areas and Municipal and conservancy staff for towns. The abstracts from house lists that were forwarded to the charge superintendents were reviewed and necessary corrections incorporated. In the previous censuses house lists were prepared for each unit and from these block lists were prepared to be attached to enumeration books. But in the 1921 census block lists were prepared in the first place to be attached to the enumeration book.

It is necessary for a state to know the number of persons emigrate to other parts of India and abroad. Since it is not possible to get details of such emigrants from countries not under British sovereignty additional columns were opened in the enumeration schedule of the state to note the name, age, sex and destination of persons who have left the state service since the last census.

Under the existing rules, the superintendent of each province had to send to the superintendent of other provinces particulars of persons who were born in those provinces and enumerated in his own instructions were given to note the enumeration of Hindus so as to know the persons who returned were a Malayali or non-Malayali so that separate statistics can be collected for both. The study of the demographical peculiarities of the tribes was still more fascinating due to the effect of the 'Nair Regulation', and of the advancement of female education, which brought thorough change in their civil conditions, birth and death rates etc. The mother-tongue was taken as the guide for classifying. Hindus as Malayalis and non-Malayalis. But this has some difficulties and the number enumerated was not absolutely correct due to the *Marumakkathayam* that prevailed among some non-Malayalis. Even though there were such problems, the difference noticed between the Malayalis and non-Malayalis in various respects justified the division.

Unlike the earlier periods where the census of railway travelers and employees were taken by the railway authorities, special arrangements were made to take their census by state agency itself.

It was in the census of 1921 that schoolteachers were tried as enumerators and supervisors for the first time. Due to the spread of education, large number of schoolteachers who were more qualified than the village officers was available as enumerators. The number of enumerators was 9147 and each had 438 persons to be enumerated as against 1600 in USA and 1030 in England in the 1910 and 1911 respectively. The time allotted was two weeks for towns and one week for small towns, which was much lesser when compared to that of the United States. The charge superintendents opined that the work done and the figures collected by the schoolteachers were more perfect and accurate than the 1911 census. The test schedules prepared by the enumerators, after scrutiny by the supervisors according to the instructions of the charge superintendents were sent to the central office for review. The reviews were returned to the charge superintendents for information and guidance. They were also instructed to give the abstract of the results of the preliminary enumeration with gender wise figures. They were again reviewed and if there are any abnormal variations it is pointed out for local

verification and modification. Special clerks were appointed under the superintendents for checking and correcting the mistakes before they were issued for final counting.

In earlier census, it was Division Peshkars, who were equivalent of the Collectors of British India, who had the power to appoint enumerators. In 1911, since they had to appoint a large number of enumerators, even a few days before the final census the appointments were not over. So in 1921 the charge superintendents were given the power to do so and before the final census the statements regarding the appointment had to be submitted. The number of enumerators was 31724 of which the government employees were the majority. The superintendents in this census had the general opinion that their work was made much easier and the instructions were complete and they were given well in advance.

The instructions given to the people not to leave their houses during census time were obeyed by the public at large and the general attitude of them to the census was favourable. But, due to political, social and economic unrest that took place all over India, especially the agitation for communal representation in public bodies in Southern India forced the members of certain castes caused some problems. This was seen not only among the public but also among the enumerators and copyists in the tabulation office.

The charge superintendents who had to telegraph one week before the final census about the completion of arrangements did it accordingly. After the final census the provisional totals were received promptly from the superintendents. The Census Commissioner for India was able to receive the results of the census within fifteen hours of the taking of the census. Even though totals were communicated within the shortest time it did not affect the accuracy because the difference between the provisional final totals was only 96 which was the lowest figure ever observed in this state.

Earlier the slip copying was done at the headquarters of taluks under Tahsildars who were the charge superintendents. But in 1921 it was conducted at the central office. The advantage of having control under the direct supervision of Census Commissioner for India was possible only in the central office. There were a large number of educated persons to get the work done. But the system of having the work done in a central office also had its drawback.

When a large number of people, especially youths with democratic views and who were unaware of official discipline were brought together concerted action on their part became possible.

However when we trace back history and chronologically calculate the different censuses that had been conducted in our state till 1921 we can without any doubt and hesitation regard the census of 1921 as the first authentic one.

Source: Kerala Calling, 2003.

MONITORING & EVALUATION OF DEVELOPMENT PROGRAMMES

(P.C.Jain, Additional Director)

1. Introduction:

Monitoring & Evaluation (M&E) is relatively a newcomer in the development scenario. Although "Monitoring" is as old as the concept of management, "Evaluation" had its origin only in the early fifties. Now a day M&E has been accepted as an effective tool for objective- oriented management of development programmes. Three factors contributed to the emergence of M&E as a relevant and useful concept in development management. In order to ensure that the benefit of development reach the poor there was a need to reorient conventional developmental strategies to go beyond the "growth" criteria and to focus simultaneously on a set of socio-political objectives such as productive employment, quality of life, beneficiary participation, environmental protection etc. Thus M&E have been developed as a measuring tool and as an aid in "learning process" of development programmes which contained the above revised objectives. The second factor accounting for growing interest in M&E had been the need for a tool that would enable development planners to and decision makers to draw lessons for better formulation and implementation of development programmes in future. The third factor supporting the concept of M&E had been the need for ensuring optimum use of limited resources and also the emphasis on the quality of development efforts.

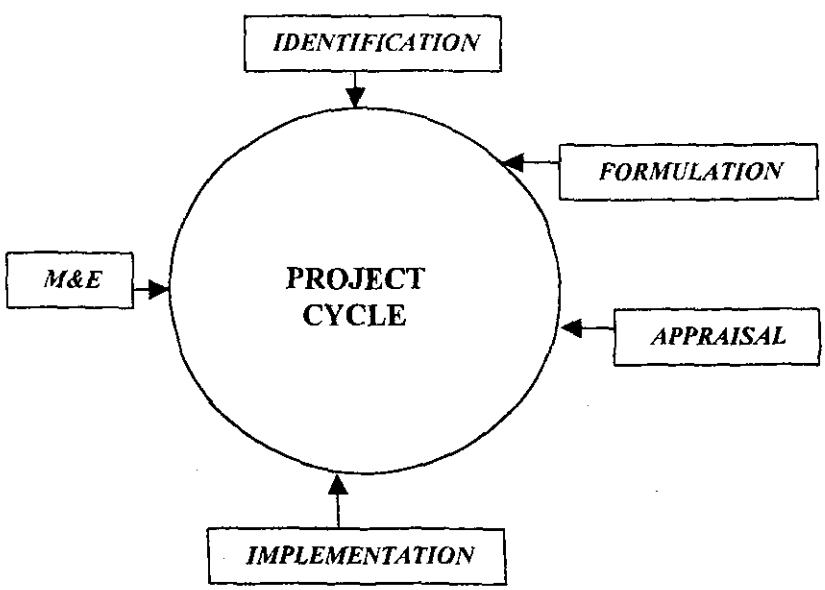
2. The concept:

The UN defined monitoring as "periodic measurement of programme inputs activities and outputs during programme implementation. According to World Bank monitoring is an internal activity gathering information essential for management decisions. The ILO describes monitoring as an activity to ensure that input deliveries, work schedule, targeted output proceed according to plan. In effect monitoring is a continuous or periodic review of implementation of activities, its components, inputs, outputs, time schedule, milestones achieved. The purpose of monitoring is to achieve efficient and effective project performance by enabling project management at all levels to keep them informed about the progress, shortfalls, constraints, etc in implementation of each project component. Thus project is a part of management information system and an internal activity. Monitoring is to be performed by the managers, supervisors and functionaries at management hierarchy. Monitoring includes measuring, recording, collecting ,processing and communicating information for management decision making.

Evaluation is a process which attempts to determine as systematically and objectively as possible the relevance, effectiveness and impact of activities in the light of the objectives. It is learning and action oriented management tool and an organization process for improving ongoing programmes, future planning, programming and decision making. Evaluation is carried out during project implementation (concurrent evaluation) , immediately after completion (terminal evaluation) and after several years after completion (expost evaluation). "Concurrent evaluation" is continuous analysis of implementation of the outputs, effects and impacts of a project. The distinction between " terminal" and "expost" evaluation is only in timing. It is done to assess the achievement of overall results of the project in terms of hierarchy of its objectives and learn lessons for future planning. Evaluation is a learning process.

3. The project cycle:

Thus M&E developed as an important link in the project cycle. The project cycle covers the process from an initial project idea to its preparation, implementation, and evaluation. The process is considered as cycle because one stage normally leads to the other. The project cycle is given below. The five broad stages in a project cycle are identification, formulation, appraisal, implementation and M&E.



The objective of *'identification'* is to identify the specific project idea, locate the priority area and to define broadly the need, scope geographical coverage, components, resources and agency of implementation. The identification process consists of finding out the best alternatives for achieving the specific objectives and making the same a formal proposal. The proposals generated under the formulation stage would also examine aspects like priority, technical feasibility, economic viability etc. Identification of issues and problems related to management, finance, institutional aspects etc may also be taken care of at the identification stage.

The objective of *'formulation'* stage is to elaborate further complement and confirm the proposals made during the stage of identification. Full description of the proposed work and measures will be done to rove the technical and financial feasibility. Comprehensive proposals for organisation and management and an economic analysis would be done at this stage. The formulation stage establishes the project concept and scope with more definiteness. The feasibility study done at the formulation stage would specify the technical and policy issues to be resolved by the funding and implementing agencies.

Appraisal is a systematic review of formulations to be carried out by the team of financing agency or government to provide an independent judgement of the advisability of financing the project. Appraisal involves review of feasibility study and comments by associating departments and agencies. This process includes field appraisal, appraisal reports, and negotiation and loan agreements.

The *implementation* stage represents the culmination point of the whole process of identification, formulation and appraisal. During implementation the actual works would be executed and the investment made. The result of implementation would be the physical achievements and utilization of the resources or fund.

Monitoring & Evaluation (M&E) provides feed back to the implementation process. M&E is an equally important point in the project cycle. The policy makers who had identified the issues, developed programmes to tackle the same gets the feed back as to what had happened in the field while implementing the project by the implementing agency.

Key M&E terms:

A lot of terms are used in the literature on monitoring and evaluation. A *programme* is an organized set of activities, which is oriented to the attainment of specific objectives. (Eg.. Poverty Alleviation Programme of GOI) A *project* is an undertaking which is designed to achieve certain specific objectives within a given period of time.(Eg. IRDP. JGSY etc) Projects are part of a programme. A *process* is an organizational operation of a continuous and supporting nature. *Inputs* are a set of resources like goods, funds, services, manpower, technology etc. The results of a project are classified as outputs effects and impacts. *Outputs* are the outcome of activities like physical outcome, services provided etc. Effects are the outcome of the use of the project outputs. Project effects usually start emerging during the implementation period but becomes full only after the completion of the project. *Impact* is the out It is the outcome of project effects. It is an expression of the changes actually produced.

5. Monitoring process:

Monitoring is a process of control and direction to achieve efficiency in implementing project activities. Monitoring can be considered to be based on three major components; information generation system, information processing and communicating system and decision making and follow up action. Information generated or collected should be authentic, adequate and timely. Monitoring id fully based on information collection, compilation, processing and communication. The three basic question of an information generation system is that what information is needed?, who will collect the information? And in what form?. The information needed generally are target activities, Inputs provided, actual progress and the factors influencing progress. Monitoring process is based on three major components namely Information Generating System (IGS), Information Processing and Communication System (IPCS) and Decision-Making and Follow-up Action (DMFA).

Modern management system works on an information system based on adequate, authentic and timely information. Monitoring also based on a regulated system of information collection, compilation, processing and communication. Hence monitoring has been described as an information gathering system even. Information on targeted

activities, inputs provided, progresses of activities, the factors influencing causing delay in implementation etc are the general information required in monitoring. The periodicity of review may vary from day to day observations to week or months depending on the size, coverage, nature and total time span of the programmes. . The information generating system would be more effective if an appropriate field management system is evolved with required field staff, supervisors and a system of maintaining up-to-date records.

The data collected will have to be interpreted to get meaningful information. Information on physical implementation, its timely progress, effective utilisation of inputs, deviations from project priorities and time frame, field problems etc have to be processed from the data collected. The information thus processed should be communicated on time to the decision-making units. Monitoring information can be communicated to various levels in the programme hierarchy according to the urgency of corrective intervention.

The decisions for corrective action are taken on the basis of monitoring information. Like up ward communication-monitoring process also envisages communication of executive decisions to the field for on the spot corrections.

The monitoring process could be of two types- extensive monitoring and intensive monitoring. Extensive monitoring (Telescopic Monitoring) will have to be made use in projects with large area of coverage. This type of monitoring is usually done at higher levels for deciding the operational strategy of projects. Extensive monitoring concentrates on target achievements and resource utilization under different components of the project. Intensive monitoring (microscopic monitoring) is applied to projects in which day to day record of physical implementation of inter-related activities are monitored. Executives directly involved in field implementation do microscopic monitoring. It follows a close-loop system of self-regulatory flow of information on a day to day basis.

M&E indicators:

Indicators are specific objectively verifiable measures of changes or results expressed from an activity. In other words indicators are designed to provide a standard against which to measure, assess, show the progress of an action towards delivery of inputs, production of outputs, and achieving its objectives. Indicators may be direct or indirect. Ideally indicators should be valid, reliable, sensitive and specific. Indicators are only reflections of the real situation and a partial measure of a complex situation. Indicators are also viewed as markers of progress towards reaching intermediate or ultimate goals.

Monitoring indicators are generally three types; input indicators, operational indicators and efficiency indicators. Evaluation indicators are two types; impact indicators and indicators of external conditions. Major elements of input indicators are the staff, equipment, credit facilities and the institutional arrangements. The operational indicators include aspects like measure of execution, timeliness, quality and cost. Performance indicators compare activity results with targets. Efficiency indicators relate inputs and outputs. Impact indicators include immediate impact, direct impact and indirect impact. Indicators of external conditions include prices, market conditions, input availability and climate.

The impact indicators:

Monitoring process has to measure the impact of development investment upon economies and societies with which we deal. We have to make a distinction between the direct impact and indirect impact of a programme. The direct impact of a programme is its effect up on the people and places it is aimed at in terms of its objectives. The indirect impact is a wider effect upon the local economy and society. Measurement of direct impact involves the question of specificity of objectives, specificity of target groups, identification of potential indicators or proxy indicators. Indirect impacts often appear as unforeseen problems or as unexpected bonus after implementation. The economic effect of a programme may be the changes in the level of employment, income, investment, or prices. The social effects of a programme are long term and difficult to reverse. Large changes in distribution of benefits can lead to changes in the relative position of different social groups within society, reinforcement of existing positions, protests or resentments. The health impact of a programme is another important aspect of any programme. Poverty is a great facilitator of illness and illness can reduce people to poverty. So the link between wealth and health may be an important impact indicator to be studied by the

monitoring agency. Environment impact is another aspect of interest for monitoring agency. The impact of the programme on soil, water, natural vegetation, ecological system etc must be taken care of in the monitoring process.

Evaluation:

Evaluation is a systematic appraisal of the worth or value of some programme with a purpose of assessing the performance of a programme in terms of the total objectives. Evaluation is usually postmortem of performance unlike appraisal, which is concurrent. Evaluation involves the following major steps.

1. Detailed description of the project
2. Measurable objectives
3. Criteria for judging achievements
4. Indices for measuring the degree of success
5. A system for collection of primary and secondary data
6. A system for information processing and communication to policy making points.

The following criteria could be followed in the *evaluation process;*

1. Effort
2. Performance
3. Adequacy
4. Efficiency
5. Process

The "effort" aspect focuses on the quantity and quality of programme inputs including information on clients, organizational support, resources, programmatic sanctions etc. Capacity for efforts is a key feature of the level of effort criteria. The level of "performance" reflects on programmatic outputs. It is the measurement of the consequences of efforts. Performance evaluation requires clarity on immediate goals and the service delivery. "Adequacy" focuses on the relationship of programme effort and performance to the larger environment. It can be conceptualized as the rate of programme effectiveness multiplied times the number of persons in need of this programme. "Efficiency" refers to the relationship among efforts, performance and adequacy and is measured by *examining strategies for minimizing efforts* while maximizing programme performance and adequacy. In effect it represents the ratio between effort and performance or output divided by inputs. The "process" level focuses on mechanisms by which effort is translated into outcome. The process can be viewed as the study of the means whereby a programme produces its results.

The distinctions:

Terminology likes "Progress Reporting and Evaluation are distinguished with the concept of monitoring in table 1 & 2 below.

Table-1 Progress Reporting & Monitoring

Progress Reporting	**Monitoring**
Adhoc	Continuous
For Small Projects	For Big Projects
Comprehensive	Selective
Reporting function	Ask Why? How?
For Administrator	For Manager
Primary level	Multiple level
Passive	Regulatory

Table-2 Monitoring & Evaluation

Monitoring	**Evaluation**
Continuous	*At a point of time*
Immediate use	Future planning
Implementing agency	Outside agency
Quick	In-depth
Full Coverage	Sample Coverage
Corrective	Learning Process
Symptomatic	Diagnostic
In-Programme	After-Programme

Grading for SSLC Examination

A+ grade		90 to 100 percent
A grade	-	80 to 89 percent
B+ grade	-	70 to 79 percent
B grade	-	60 to 69 percent
C+ grade	-	500 to 59 percent
C grade	-	40 to 49 percent
D+ grade	-	30 to 39 percent
D grade	-	20 to 29 percent
E grade	-	Less than 20 percent

Those above D+ will be eligible for higher studies.

Top brands advertising on TV

October Brands	Spends (Rs Cr)	November Brands	Spends (Rs Cr)
Airtel Cellular Phone Service	8.6	Pepsodent Germi Check	8.0
Colgate Dental Cream	8.1	Reid & Taylor	7.7
Brooke Bond Red Label	6.9	Nirma	7.6
Coca Cola	6.9	Colgate Dental Cream	7.2
Tide	5.8	Surf Excel	5.5
Pepsodent Germi Check	5.7	Krack Sr Cream	5.3
LG Flatron	5.6	Tata Indicom CDMA Mobile Service	5.1
Reliance India Mobile	5.5	Coca Cola	5.0
Pepsi	5.3	Fair & Lovely Savly	5.0
Samsung Plano	5.0	VIP Luggage	5.0
Others	64.61	Others	55.41

Source: Economic Times, Dec 22.

Summary of Export of Coir Products (October - 2003)

Quantity in Tonnes — Value in Rs. Million

Sl No	Name of Items	October 2003		October 2002	
		Quantity	Value	Quantity	Value
1	Coir Fibre	55.00	0.731	97.04	1.122
2	Coir Yarn	1180.14	33.532	1377.47	37.444
3	Handloom Mat	2981.44	179.274	2439.41	144.599
4	Powerloom Mat	135.53	8.985	302.44	18.314
5	Tufted Mat	1397.18	73.740	446.66	24.128
6	Handloom Matting	251.84	15.858	343.12	20.816
7	Powerloom Matting	47.22	2.992	15.14	0.897
8	Geo Textile	308.23	13.621	289.23	13.085
9	Coir Rugs & Carpet	119.42	9.485	129.17	9.117
10	Coir Rope	64.24	2.129	78.57	2.537
11	Curled Coir	0.00	0.000	38.00	0.673
12	Rubberised Coir	27.90	1.409	77.06	5.860
13	Coir Pith	2324.98	17.266	1706.64	12.471
14	Coir Other Sorts	9.95	0.584	1.50	0.072
	Total	**8903.07**	**359.606**	**7341.45**	**291.135**

Summary of Export of Coir Products

Quantity in Tonnes — Value in Rs. Million

Sl No	Name of Items	April - October 2003		April - October 2003	
		Quantity	Value	Quantity	Value
1	Coir Fibre	586.15	6.861	623.89	6.424
2	Coir Yarn	7319.20	198.573	6055.23	158.142
3	Handloom Mat	19837.20	1189.766	19093.17	1207.879
4	Powerloom Mat	475.48	32.324	892.16	53.512
5	Tufted Mat	6867.84	373.562	3371.52	178.781
6	Handloom Matting	2665.37	167.297	2882.57	195.137
7	Powerloom Matting	147.11	9.236	109.81	7.024
8	Geo Textile	1566.32	71.350	1158.50	56.451
9	Coir Rugs & Carpet	755.75	52.093	999.73	68.437
10	Coir Rope	99.08	2.903	145.25	4.096
11	Curled Coir	0.00	0.000	355.87	5.909
12	Rubberised Coir	271.66	19.879	280.25	21.966
13	Coir Pith	15729.83	108.801	12980.20	97.940
14	Coir Other Sorts	278.15	10.077	296.41	10.957
	Total	**56599.14**	**2242.722**	**49244.56**	**2072.655**

Source: Coir News, December 2003.

Statistical Thinking

[Report on talks given by C.R. Rao in TVM]

By M.A. Ravindran, Price Supervisory Officer, Palakkad.

Part I

The report of the International Conference held in Kochi on 'Statistics and Business', dispatched earlier, had been concluded with a quotation from C.R. Rao's book.

Dr. C. R. Rao – The Greatest Statistical Thinker

Dr. Calyampudy Radhakrishna Rao, 83, of Karnataka, is the most eminent statistician living today and he is the greatest statistical thinker of the present day world. He earned his PhD and ScD at Cambridge, U.K. In an informal chat in the faculty of statistics of the Kerala University on 20 Feb 2003, the energetic, exuberant and sharp-witted octogenarian told us the story of his getting his first doctorate. [The most uncanny feature of his charming characteristics is the way he regards even a Price Supervisory Officer as his equal]. When 2000-year old skeletons were excavated in North Africa, the European anthropologists sought the help of Indian Statisticians in studying their relevance to the present population. J.C. Trevor, a Cambridge anthropologist, personally invited Prof. P.C. Mahalanobis to conduct the study. He in turn sent his pupil C.R. Rao, already a master of multivariate analysis, together with R.K. Mookherji to investigate the skeletons and make the study. It was in the year 1946. [Rao was born on 10 Sep. 1920]. When Rao finished his report it took a nature of a doctoral thesis and Cambridge University conferred on him a doctorate for it. Mookherji also got a doctorate. Their thesis were later on expanded and the Cambridge book, 'Ancient Inhabitants of Jobel Moya', jointly by Rao, Mookherji and Trevor came out in 1955. This happens to be Rao's first book. Since then, universities of 16 countries have conferred on him honorary doctorates which number to 28. now he has a total no. of 14 books and about 350 research papers to his credit. His contribution to the science of statistics is epochal. He has originated four theorems:

1. Rao-Blachwell Theorem, 2. Fischer-Rao Theorem, 3. Rao-Rubin Theorem and 4. Kagan-Linnik-Rao Theorem.

Besides, he has propounded 22 statistical theories and they are also known in his name:

1. Cramer-Rao Bound, 2. Rao-Blackwellization, 3. Fischer-Rao Metric, 4. Rao Distance, 5. Rao's Score Test, 6. Neyman-Rao Test, 7. Rao's Least Squares, 8. Rao's U-Test, 9. Rao's F-Test, 10. Rao's Paradox in multivariate Analysis, 11. Rao's Paradox in Sample Surveys, 12. Rao's Damage Model, 13. Rao's Second Order Efficiency, 14. Hamming-Rao Bound, 15. Rao-Guttman Relationships, 16. Rao's Canonical Factors, 17. Rao-Yanoi g-Inverse, 18. Khatri-Rao Product, 19. Rao Inequality, 20. Khatri-Rao Inequality, 21. Rao's Quadratic Entropy, and 22. Rao's Axioms of Entropy.

He has held several important positions. From 1949 to 1963 he was Head of the Research & Training School of Indian Statistical Institute. Then he became its Director. After retirement he became President of the International Statistical Institute and National Professor in India. The Government of India had earlier honored Dr. Rao with the title of Padma Vibhushan, 'for his outstanding contributions to Science and Engineering.'

Of late, the President of United States ceremoniously awarded him the National Medal of Science. This was performed on 12 July 2002. the President's citation read: 'for his pioneering contributions to the foundations of statistical theory and multivariate statistical methodology and their applications leading to the enriching of physical, biological, mathematical, economic and engineering sciences'..

At present he is Emeritus Eberly Professor of Statistics and Director of Center for Multivariate Analysis, Pennsylvania State University, USA.

Dr. Rao came to the capital of Kerala twice recently. He was in Trivandrum on 23 & 24 Dec 2002 and 19 & 20 Feb 2003.

On the Christmas Eve of 2002 Dr. Rao talked on ' Statistics in the Twenty-first Century' and on 19 Feb 2003 his topic was ' Statistics and Creation of New Knowledge'. Both the discourses were given in the Senate Chamber.

But Dr. Rao's expositions, though very brilliant, are not readily understandable because of the abstruse character of his topics. A pre-taste of the historical and philosophical aspects of the science of statistics is, therefore, necessary, if one is really to profit from his ideas. We, especially well equipped as statisticians, can read out, this reporter may warn, a challenge issued to Keralites in there lectures.

The following is a feeble attempt to present his ideas clothed in everyday language.

Creation of New Knowledge

Chance is inherent in all natural phenomena. What is chance? It is like the drawing of a number in lottery. From the time of Aristotle, philosophers were aware of the role of chance in human life. They knew that the Universe worked in mathematical precision. But that was from the viewpoint of the controller of the Universe. Human existence and natural laws are not based on mathematical precision. To us humans, the natural phenomena are replete with what they, the philosophers, call chance. For, the possibilities of human intellect are limited. We are not capable of knowing what will happen the next hour. We are not certain whether we will be living or dead tomorrow. Human intellect is also handicapped with what they call the malady of forgetfulness. We can't remember what we ate for breakfast, say, last Sunday. [Of course, unless we keep an exact diary of what we ate and when]. Quite uncertain about the past and future, we float blissfully in the present. Like our intellect, our perception also works in a limited circle. We can see only seven colours (from red to violet) and their combinations. The umpteen ultra-violet and infrared rays are beyond our perception. So also with sound. Thus, we live in a relative world of crass uncertainty, giving up ourselves to the mercy of chance.

> *[The next day (ie. On 20 Feb 2003), alluding to this point of his, I queried:*
> *"Yet, Sir, human life thrives on earth. How?" And pat came the reply:*
> *"With the power of forecasting". His words reverberated in my brain like a thunderbolt. Utterly flabbergasted, I sank into the chair].*

Yes, we are constantly forecasting under the medley of uncertainties, relying on order in disorder. We take decisions with a set of assumptions. We assume, for example, that the world will be existing like this and we will be living in it tomorrow. The philosophers did not make a study of uncertainty and chance. Uncertainty was baffling to the scientists also. It was only in the 20th century that a couple of bold thinkers started exploring the intricacies of uncertainty – and they were statisticians. They found that the cause of uncertainty was fivefold:

1. Lack of information, **2.** Lack of correctness in information, **3.** Lack of knowledge (in handling available information). **4.** Catastrophes (of natural phenomena), **5.** vagaries (of human behavior)

They realised that the quantification of, or specifying the amount of, uncertainty could be of help in finding order in disorder. They succeeded in specifying the amount of uncertainty in a meaningful way with the help of calculus of probability. History says calculus of probability originated in games of chance. In Europe, they recorded the results of a month's roulette playing at Monte Carlo and studied them as a set of quantified uncertainties. This study resulted in their arriving at some techniques for solving complicated numerical problems. These are known as simulation or Monte Carlo techniques. In 1927 LHC Tippet realised, after Karl Pearson's biometric tables, that random numbers were essential for investigations and so he produced a set of 41,600 numbers. This was a small 26-page book. The book of random numbers is the

20th century's invention for investigating chance and solving problems of the real world.

Thus they were able to quantify uncertainty and this paved the way for devising methods to reduce and control uncertainty. As they succeeded in the quantification of uncertainty, they realised that chance deals with order in disorder. And what is order in disorder? Here's an example. The male and female children in each family are born in different ratios. In one family it may be 1 to 5 and in another 4 to 2. This is disorder. But quantify the no. of male and female children in a wide area, e.g. a village, and take the ratio. It is always 50 to 50. Male and female population of the world is always fifty-fifty. This is order-order in disorder. In India, Prof. P.C. Mahalanobis exploited the Monte Carlo technique and the random technique and evolved Random Sampling Experiments. He taught the world that simulation using random numbers enables us to solve complicated problems such as computing complicated integrals, calculating areas of complex figures and, what's more, estimation of unknown parameters. With this, the scope of random numbers and the concept of chance became unlimited. Now chance is no longer to be worried about. It is a way to present our knowledge. For, quantification of uncertainty means the expression and conveying our knowledge. It doesn't stop there. Quantification helps us to take uncertainty itself into account, which process leads to making decisions. So, quantification of uncertainty is now a full-fledged discipline. It enables bold excursions into the secrets of Nature, because natural laws are probabilistic. The old saying, 'Lies, dammed lies and statistics' is gone now. People criticised descriptive statistics with there words. But now the growth of analytical statistics has reversed the saying as 'Truth, exact truth and statistics!' By the second half of the 20th century all methods of acquiring knowledge became essentially statistical. Nobody can deny the fact that statistical science has now opened up new ways of acquiring knowledge, of understanding nature and of taking optimal decisions in or lives. All scientists and all philosophers agree with it. Dr. Rao says, statistical thinking is an important ingredient of creativity. For, in its large repertoire of techniques are included those of data analysis and reasoning. In addition to the traditional Descriptive Data Analysis (DDA) and Inferential Data Analysis (IDA), now Extraordinary Data Analysis (EDA) inaugurated by Turkey in 1968 is in wide use. Of course, the analysis of colossal data is a laborious task. But, with the advent of Data Mining it has become comparatively easy. In statistics, as in logic, there are two kinds of reasoning: Deductive reasoning and Inductive reasoning. Mathematics is deductive logic and statistics is mostly inductive logic. The words 'deduction' and 'induction' are very abstruse terms. They cannot be defined easily. But they can be explained by analogy: King and Beggar are equals. Can it ever be so? It can be, if all the kingliness of King and all the beggarliness of Beggar are deducted. They are human beings. This kind of logic is called deductive reasoning. [Not deducted or deductible reasoning, of course].

If 2 + 2 = 5, then 5 is 4
Substract 3. 5 – 3 = 2.
Then 2 is 1. King and Beggar are 2.
Therefore they are one.

Now, what's inductive reasoning? King met beggar on street. Beggar bore a striking resemblance to King. So King asked him, "Hey, was your mother employed in the palace?" And Beggar answered, "No, but my father was". This answer of Beggar flashes a new knowledge to us, doesn't it? We get the new knowledge, that wonderful knowledge, by a special process taking place in the brain and that special thought process is what the logicians call inductive reasoning. And this is the basis of statistical thinking.

[Dr. Rao has said that forecasting is a natural endowment of human intellect, and it is on its strength that human life thrives on earth. Now he says inductive reasoning is an endowment of human brain. If so, all statistical processes starting from collection of data (we collect data through our

senses) and advancing through quantification of uncertainties, forecasting, finding order in disorder, random sampling, multivariate methodology, DDA, IDA, EDA, Data Mining, deductive reasoning and inductive reasoning and culminating in creation of new knowledge are all naturally taking place in our brains. Are all the methods invented by statisticians also natural endowments of human brain? Agitated in mind, I put the question:

"Sir, is normal thinking statistical?"

"Ah, that's a thought".

"Then what's the difference between normal thinking and statistical thinking?"

"You can see the stars with your naked eyes. But if you take the aid of a telescope, your vision is enlarged, isn't it?"

At this aphoristic words of the statistical preceptor of the world, again a thunderbolt rolled in my intellect and ideas began to rain into my mind in torrents. I have no twenty-twenty vision and so I have to wear glasses. To read the inscription on a tablet we've to use a magnifying glass. To see microbes we've to use microscopes. To see distant things we've to watch them through binoculars. And in order to have a clearer, larger and nearer vision of the stars we have to take the aid of telescopes.]

As human intellect is imperfect as already shown at the outset, we have to take the aid of statistical methods or statistical thinking to see the 'state of affairs' (sthithis) in their true entirety. Hence statistical thinking is a stepping-stone to creation of knowledge, and what is more, to creativity (Rao uses the word creativity in a wider sense – its scope ranges from the sargamakam to the Srishtiparam) and creativity is a stepping-stone to development and progress; welfare and prosperity.

Part II

Statistics in 21st Century

Upto now we had been discussing the achievements of statistical thinking in the 20th century. Now let's see what is in store for statistics in the days to come. We've seen that quantification of uncertainty not only helps us to create knowledge, but also to express and to convey to others the knowledge thus created. Over and above that, quantification leads to taking uncertainty also into account, which in turn facilitates making optimal decisions – optimal decisions. The knowledge acquired by inductive reasoning might not be uncertain knowledge. It might still be uncertain, but if the amount of uncertainty is quantified, it becomes useful knowledge. Then it is useable knowledge. Such knowledge can be used in decision-making under uncertainty. As a result, statistics become inevitable in solving practical problems in any area of human endeavour. So statistics is no longer simply applied mathematics. It is evolving as a metascience. Its object is logic and methodology of other sciences – the logic of decision-making and that of experimenting in them. Rao sees the future of statistics in its communication with research workers in other branches of learning. It is the statistician that the present age turns for what is more essential in all its most important activities. This is what Dr. Rao means by 'putting chance to work'. The major part of the December discourse was highly theoretical – concerning the future of theories as well as theories of future. His conclusion was, "If there is a problem to be solved, seek statistical advice, instead of appointing a committee of experts. Statistics can throw more light than the collective wisdom of the articulate few." He says this with numerous examples and technical explanations.

Thus the statistical science with its panoply of theories comes up trumps in the moment of truth, in a twilight world of truth and half-truth.

The Challenge

Dr. C.R. Rao had not come to the capital intentionally to issue a challenge to the people of Kerala, nor was there a willful attempt from his part to do so. But we, well equipped as statisticians, can discern the emergence of a challenge in his utterances. "If there is a problem to be solved, seek

statistical advice", were his oft-repeated words. Is there a greater problem here than that of the ills of Kerala economy? "The more prosperous a country, the better is its statistics", many is the time this reporter heard him utter these mutually qualifying clauses, too. On solving problems he further adds, "In the present times we have to face several challenges in an administrative, political and scientific environment, which is not entirely favorable for systematic and rational approach to solution of problems".

In this context, it would be worth our while to turn back the pages of history and see what Prof. Prasantha Chandra Mahalanobis, the father of Indian statistics did in the pre-Independence days. He sensed independence. Recognising statistics as the key technology for planning, he pioneered the statistical movement. He established Indian Statistical Institute in 1931, he started the Indian Statistical journal "Samkhya" in 1933, he inaugurated systematic agricultural sample surveys in 1937, and then sample surveys for socio-economic data also. (These sample surveys are still going on as TRS & NSS). He brought up an array of statisticians like R.C. Bose, S.S. Bose, S.N. Roy, K.B. Madhava, H.K. Nandi and U.S. Nair (U. Sivaraman Nair). [Rao is in the array of second generation statisticians. The first generation masters are all dead and gone.] Prof. Mahalanobis predicted the Bengal famine of 1943. But the British authorities didn't heed. So, then on, he stressed more on agricultural statistics. There occurred food scarcity in India during 1965-70. This reporter remembers how anti-socials snatched food packets from the hands of school-going college-going students. Wheat was imported from the US under PL-480 program. Thus Keralites learned to eat wheat. Only statistics could attack the food problem on all fronts. And the result? The granaries of India are full to the brim. The force behind the roaring success of the green revolution and the white revolution was statistical thinking. Mahalanobis died on 1972. But India strengthened statistics to solve national problems. Now statistics is an integral part of national planning. The quality of statistical data at macro-level has become excellent. The support from Government was the secret behind the success of the statistical movement. The learned Prime Minister Nehru was all help to the cause of statistics. Even before independence the British could not be callous to statistical thinking. So Mahalanobis could bring about the Hiracud and Damodar Valley Multipurpose Hydel Projects in those olden days. And the achievements of the five-year plans are common man's knowledge.

The story doesn't end there. Statistical thinking in India had second thoughts on planning itself from the seventh five-year plan period when they began to play with the idea of local level planning. Earlier, the 1976-77 budget had an appendix entitled 'Strategy for Integrated Rural Development'. The Integrated Rural Development (IRDP) was thus started on the last lap of the fifth plan period, i.e. 1978-79. In 1977 Ashok Mehta Commission had recommended reconstruction of the Panchayat Raj, so that channel for people's participation in the process of growth would be assured. The commission saw that there was scope for decision-making in the district level. Then the Dantwala Committee recommended Block as unit for planning. The idea of rural development with people's participation in panchayat level was mooted in the seventh plan period (1985-90). In 1992, Parliament passed the 73rd amendment motion of the Constitution for strengthening panchayats for micro-level planning. Thus, the idea of local level planning is a product, an offspring, a child of statistical thinking in India. In 1994, the Kerala Panchayat Raj and Nagarapalika Bills were enacted by the Kerala Assembly. The local level planning process started here in 1996-97.

Planners in Kerala showed exceptional foresightedness. The 1976-77 Budget strategy of integrated rural development and the Ashok Metha Commission report had played heavily upon the reasoning of planning experts in Kerala and they had put on their thinking-caps right on time. As early as 1980, they had pleaded the spatial planning

should go parallel with local level planning. But two parallel lines never meet on earth. So, in the nineties they realised that the spatial plan should go hand in hand with the local level plan. When local level planning actually started in 1997-98, they said that the spatial plan should be dovetailed with the local level plan. And as local level planning in Kerala picked up steam, modern planning experts would say that a local level plan without an inbuilt spatial plan would be like an un-reinforced concrete structure. Even as the 73rd constitutional amendment was in the offing, they effected a test dose to local bodies by allotting to each of them an amount of one million rupees as United Funds. This was in 1990-91. The next year, 125 panchayats were selected under self-reliant Village Scheme and an allotment of upto Rs. 2 crore were given for planning and implementing schemes of their choice in their respective areas. In such experimentations, foresighted as they were, the planners guaranteed statistical expertise by placing the concerned Taluk Statistical Officer on the Planning and Implementation Committee.

But, alas, the local level or the decentralised planning started in 1997-98, had not such statistical backing. In his earlier article this reporter had cited various statistical methods intended for bettering industrial production. They were based on the 'Orthogonal Arrays' introduced by C.R. Rao for improving manufactured goods and increasing productivity without additional injection of capital. Rao, Who spent his entire career promoting statistics and their usefulness in society, has since developed the 'Orthogonal Arrays' and has evolved methods for optimum uses of resources in economic planning. For, statistics is the means for making short and long range plans for specified social and economic development. So, planning can no more be a hit-and-miss affair. It is high time micro-level statistics had their sway in Kerala. In his December lecture, Rao had reiterated that statistical thinking in the 21st century cannot remain confined on statisticians only, but will have to pervade the entire population. Like reading, writing arithmetic, statistical awareness is essential for complete literacy of 21st century citizen.

Friends jib at this report thus: "If we go on stressing upon statistical thinking, the people of agricultural department will say agricultural thinking is better. The Revenue people will say revenue thinking is all the more better and those in the livestock department will say that the livestock thinking is the best". Most welcome, friends! If they get inspired and pull their weight, bravos to them. Bu howsoever they might try, their thinking will remain sectoral. Only statistics is all-embracing. And, then, the several ideologies of the wide world, grandiose though they all are, will be labeled sectarian these days. Only statistics is all encompassing.

[At this juncture I'd like to reminisce about my encounter with Sri. Abdul Thaha, the harbinger of spatial planning of Kerala. After retirement, he had become the Director of National Institute of Rural Development in Hyderabad. I was in a delegation sent on a study tour of irrigation projects in Andhra Pradesh, by the CADA. We stayed at WALAMTARI (Water and Land Management Training and Research Institute) hostel, Himayat Nagar. I made a detour to Rajendra Nagar and met him there, large as life.

"Sir, what is the secret behind the success of the Germans and Japanese?"

"In their countries they acted onnadankam"].

Onnadankam is a Malayalam idiom and 'to act onnadakom' means to 'act as one man'. If a people want to act as one man, first they must learn to think as one man. The idea of decentralised planning has been heartily welcomed by all sections of the people of Kerala. If local level planning is the worthy child of the worthy father Statistics, the latter must rescue its offspring. This is the challenge the community of statisticians has to meet. It is high time statistical thinking got deeply embedded in the consciousness of Kerala. Statistical thinking is the best panacea.

Consumer Price Index (Cost of Living Index) numbers for Agricultural and Industrial Workers for the month of December 2003

(Base 1998-99 =100)

Sl. No	Centre	Linking Factor *	Index Numbers for		Estimated Indices for	
			November 03	December 03	November 03	December 03
1	Thiruvananthapuram	10.39	123	124	1278	1288
2	Kollam	10.28	124	125	1275	1285
3	Punalur	9.96	115	115	1145	1145
4	Pathanamthitta	-	118	119	-	-
5	Alappuzha	10.45	116	117	1212	1223
6	Kottayam	10.40	118	119	1227	1238
7	Mundakkayam	10.12	115	115	1164	1164
8	Munnar	10.03	114	114	1143	1143
9	Eranakulam	9.92	118	118	1171	1171
10	Chalakkudy	10.60	117	118	1240	1251
11	Thrissur	10.05	118	119	1186	1196
12	Palakkad	10.48	116	116	1216	1216
13	Malappuram	10.30	119	120	1226	1236
14	Kozhikode	10.08	117	118	1179	1189
15	Meppady	10.64	115	116	1224	1234
16	Kannur	10.06	119	120	1197	1207
17	Kasaragod	-	122	123	-	-

- *Linking factors approved in G.O (MS) No.7/2002/Plg. dated 21-03-2002 have been used from October 2001. Base for all centres is 1970 = 100.*

The Consumer Price Index (Cost of Living Index) Numbers applicable to employees in employment under the Minimum Wages Act (Central Act XI of 1948) for the month of August 2003 as ascertained by the Director of Economics & Statistics under clause (C) of Section 2 of the Act.

CONSUMER PRICE INDEX FOR INDUSTRIAL WORKERS

(Base 1982 = 100)

States	Centre	Consumer Price Index Number for the month of											
		Jan 03	Feb 03	Mar 03	Apr 03	May 03	Jun 03	Jul 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03
Southern States													
Kerala	1. *Aluva*	489	486	479	488	485	491	490	488	488	496	500	499
	2. Mundakayam	481	479	476	486	489	496	496	490	493	491	492	494
	3. Kollam	518	509	518	513	514	512	534	519	526	526	539	530
	4. Thiruvanantha puram	555	556	553	563	555	569	577	571	563	555	566	572
	Average	511	508	507	513	511	517	524	517	518	517	524	524
Tamilnadu	1. Chennai	523	523	525	536	536	540	538	536	536	533	534	535
	2. Coimbatore	485	490	491	500	497	503	497	490	495	495	500	501
	3. Coonoor	483	489	492	501	509	506	508	499	493	492	495	497
	4. Madurai	470	470	472	481	480	484	485	482	485	488	492	492
	5. Salem	467	465	469	484	485	489	490	487	493	486	489	486
	6.Tiruchirappalli	564	556	541	559	573	572	577	573	573	573	583	576
	Average	499	499	498	510	513	516	516	511	513	511	516	515
Andra Pradesh	1. Gudur	462	464	466	464	467	469	470	471	469	476	476	475
	2. Gundur	488	495	499	507	510	514	512	511	504	501	504	502
	3. Hyderabad	478	481	487	492	495	505	506	501	502	504	503	497
	4. Visakhapatanam	476	475	475	478	481	491	491	492	488	490	488	488
	5. Warangal	512	523	525	530	536	538	533	529	528	520	521	511
	Average	483	488	490	494	498	503	502	501	498	498	498	495
Karnataka	1. Bangalore	463	465	469	475	475	477	481	476	480	481	486	485
	2. Belgaum	522	523	524	527	530	533	544	542	544	544	544	544
	3. Hubli Dhanwar	481	487	486	491	495	496	498	495	496	496	498	503
	4. Meccara	459	460	460	470	471	474	484	479	480	478	481	486
	Average	481	484	485	491	493	495	502	498	500	500	502	505
Pondichery	1. Pondicherry	529	536	533	544	547	547	546	547	544	544	555	549

Contd.

Consumer Price Index for Industrial Workers (Contd.)

(Base 1982 = 100)

States	Centre	Consumer Price Index Number for the month of											
		Jan 03	Feb 03	Mar 03	Apr 03	May 03	Jun 03	Jul 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03
Northern States													
Delhi	1. Delhi	555	558	564	568	568	569	577	575	573	581	574	576
Maharastra	1. Mumbai	574	574	578	585	586	586	589	583	583	585	587	589
	2. Nagpur	493	492	495	496	501	504	510	510	509	510	508	506
	3. Nasik	524	516	524	531	535	534	537	534	534	532	534	545
	4. Pune	540	539	541	553	556	560	563	557	556	558	564	566
	5. Solapur	491	494	494	491	491	498	505	502	504	509	515	517
	Average	524	523	526	531	534	536	541	537	537	539	542	545
Haryana	1. Faridabad	482	486	493	494	494	497	505	501	510	511	508	504
	2. Yamuna Nagar	447	452	454	457	458	458	468	465	467	475	476	466
	Average	465	469	474	476	476	478	487	483	489	493	492	485
West Bengal	1. Asansol	455	453	455	467	471	474	476	478	479	487	490	484
	2. Darjeeling	410	403	404	420	424	427	424	429	430	435	436	430
	3. Durgapur	552	551	561	566	563	559	562	567	565	579	576	571
	4. Haldia	578	575	581	584	584	588	592	590	593	602	612	595
	5. Howrah	542	538	541	557	555	557	557	557	552	572	575	565
	6. Jalpaiguri	404	409	410	411	416	418	427	424	429	437	433	429
	7. Kolkata	527	527	533	545	542	541	545	541	535	549	561	547
	8. Raniganj	408	406	410	419	424	421	433	432	435	439	447	443
	Average	485	483	487	496	497	498	502	502	502	513	516	508
Chandigarh	1. Chandigarh	514	514	516	516	519	519	529	533	535	538	538	538
Uttar Pradesh	1. Agra	445	448	451	449	447	449	457	459	460	466	468	464
	2. Ghaziabad	479	484	488	490	493	493	500	501	502	501	495	494
	3. Kanpur	453	458	464	465	463	465	473	475	483	491	485	476
	4. Saharaupur	440	444	446	450	449	448	460	460	460	466	461	459
	5. Varanasi	484	491	502	498	498	503	509	510	508	517	517	513
	Average	460	465	470	470	470	472	480	481	483	488	485	481
Madhya Pradesh	1. Balaghat	432	427	428	433	438	441	449	452	449	457	455	452
	2. Bhopal	508	509	515	520	524	525	534	532	532	537	534	531
	3. Indore	491	492	506	513	514	518	526	514	513	515	516	513
	4. Jabalpur	466	468	473	475	480	482	502	499	501	504	506	498
	Average	474	474	481	485	489	492	503	499	499	503	503	499
	All India	**483**	**484**	**487**	**493**	**494**	**497**	**501**	**499**	**499**	**503**	**504**	**502**

CONSUMER PRICE INDEX AND % VARIATIONS OF INDEX FOR INDUSTRIAL WORKERS

State	Centre	CPI for the month of		variation	CPI for the month of		variatio
		Nov-02	Nov-03		Dec-02	Dec-03	
Southern States							
1. Kerala	1. Aluva	487	500	2.67	487	499	2.46
	2. Mundakayam	482	492	2.07	483	494	2.28
	3. Kollam	503	539	7.16	518	530	2.32
	4. Thiruvananthapuram	553	566	2.35	554	572	3.25
	Average	506	524	3.56	511	524	2.60
2. Tamilnadu	1. Chennai	528	534	1.14	522	535	2.49
	2. Coimbatore	491	500	1.83	487	501	2.87
	3. Coonoor	490	495	1.02	483	497	2.90
	4. Madurai	476	492	3.36	477	492	3.14
	5. Salem	475	489	2.95	472	486	2.97
	6.Tiruchirappalli	563	583	3.55	573	576	0.52
	Average	504	516	2.32	502	515	2.42
3. Andra Pradesh	1. Gudur	470	476	1.28	467	475	1.71
	2. Gundur	490	504	2.86	492	502	2.03
	3. Hyderabad	476	503	5.67	478	497	3.97
	4. Visakhapatanam	479	488	1.88	479	488	1.88
	5. Warangal	517	521	0.77	507	511	0.79
	Average	486	498	2.47	485	495	2.06
4. Karnataka	1. Bangalore	460	486	5.65	460	485	5.43
	2. Belgaum	524	544	3.82	523	544	4.02
	3. Hubli Dhanwar	484	498	2.89	480	503	4.79
	4. Meccara	462	481	4.11	463	486	4.97
	Average	483	502	4.09	482	505	4.78
5. Pondicherry	1. Pondicherry	531	555	4.52	531	549	3.39

Consumer Price Index and % Variations of Index for Industrial Workers (Contd.)

State	Centre	CPI for the month of		% variation	CPI for the month of		% variation
		Nov-02	Nov-03		Dec-02	Dec-03	
Northern States							
1. Delhi	1. Delhi	561	574	2.32	551	576	4.54
2. Maharastra	1. Mumbai	565	587	3.89	569	589	3.51
	2. Nagpur	504	508	0.79	497	506	1.81
	3. Nasik	519	534	2.89	521	545	4.61
	4. Pune	538	564	4.83	537	566	5.40
	5. Solapur	492	515	4.67	489	517	5.73
	Average	524	542	3.44	523	545	4.21
3. Haryana	1. Faridabad	487	508	4.31	482	504	4.56
	2. Yamuna Nagar	454	476	4.85	446	466	4.48
	Average	471	492	4.57	464	485	4.53
4. West Bengal	1. Asansol	467	490	4.93	460	484	5.22
	2. Darjeeling	410	436	6.34	405	430	6.17
	3. Durgapur	563	576	2.31	554	571	3.07
	4. Haldia	590	612	3.73	582	595	2.23
	5. Howrah	556	575	3.42	546	565	3.48
	6. Jalpaiguri	424	433	2.12	416	429	3.13
	7. Kolkata	544	561	3.13	530	547	3.21
	8. Raniganj	425	447	5.18	414	443	7.00
	Average	497	516	3.79	488	508	4.02
5. Chandigarh	1. Chandigarh	520	538	3.46	514	538	4.67
6. Uttar Pradesh	1. Agra	445	468	5.17	437	464	6.18
	2. Ghaziabad	481	495	2.91	478	494	3.35
	3. Kanpur	468	485	3.63	456	476	4.39
	4. Saharaupur	444	461	3.83	439	459	4.56
	5. Varanasi	498	517	3.82	489	513	4.91
	Average	467	485	3.85	460	481	4.65
7. Madhya Pradesh	1. Balaghat	444	455	2.48	438	452	3.20
	2. Bhopal	516	534	3.49	509	531	4.32
	3. Indore	494	516	4.45	492	513	4.27
	4. Jabalpur	483	506	4.76	471	498	5.73
	Average	484	503	3.82	478	499	4.40
	All India	**489**	**504**	**3.07**	**484**	**502**	**3.72**

CONSUMER PRICE INDEX FOR AGRICULTURAL LABOURERS

Sl. No.	Centre	Base 1986-87 = 100											
		Jan 03	Feb 03	Mar 03	Apr 03	May 03	Jun 03	Jul 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03
Southern States													
1	Kerala	330	329	328	331	335	341	343	343	340	339	341	340
2	Tamilnadu	355	355	354	358	359	362	356	354	356	349	350	351
3	Anthrapradesh	341	342	343	345	347	352	349	349	348	347	348	349
4	Karnataka	328	329	330	332	334	333	336	335	334	336	338	341
Northern States													
5	Maharashtra	319	320	321	322	325	330	334	333	333	334	333	334
6	Haryana	322	326	329	331	329	332	333	336	336	339	337	339
7	West Bengal	299	300	303	305	308	308	318	321	321	324	326	320
8	Uttar Pradesh	317	323	325	325	322	325	327	328	328	333	330	327
9	Madhya Pradesh	309	312	316	317	320	323	322	320	320	322	318	315
10	Assam	325	326	329	334	336	337	340	342	342	345	345	344
11	Bihar	293	300	305	304	300	301	305	305	305	311	315	313
12	Gujarat	326	327	331	335	336	339	343	341	341	342	338	337
13	Himachalpradesh	308	308	310	315	309	311	320	322	322	320	320	320
14	Jammu & Kashmir	350	349	348	352	353	346	342	344	344	347	343	343
15	Manipur	299	300	301	302	303	305	307	308	308	308	310	307
16	Meghalaya	340	340	340	341	348	345	349	348	348	350	354	352
17	Orissa	292	291	295	297	302	310	316	318	318	322	320	314
18	Punjab	324	324	332	332	330	333	337	341	341	342	340	341
19	Rajastan	323	323	325	326	328	330	326	324	324	321	317	319
20	Tripura	331	323	322	315	315	320	323	323	323	324	323	321
	All India	**320**	**322**	**324**	**326**	**327**	**330**	**331**	**332**	**332**	**333**	**333**	**332**

CONSUMER PRICE INDEX AND % VARIATIONS FOR AGRICULTURAL LABOURERS

Base 1986-87 = 100]

Sl. No.	Centre	Index for		% Variation	Index for		% Variation
		Nov-02	Nov -03		Dec -02	Dec-03	
	Southern States						
1	Kerala	329	341	3.65	330	340	3.03
2	Tamilnadu	340	350	2.94	356	351	-1.40
3	Anthrapradesh	345	348	0.87	343	349	1.75
4	Karnataka	322	338	4.97	324	341	5.25
	Northern States						
5	Maharashtra	321	333	3.74	318	334	5.03
6	Haryana	330	337	2.12	325	339	4.31
7	West Bengal	310	326	5.16	304	320	5.26
8	Uttar Pradesh	324	330	1.85	318	327	2.83
9	Madhya Pradesh	321	318	-0.93	314	315	0.32
10	Assam	331	345	4.23	329	344	4.56
11	Bihar	300	315	5.00	296	313	5.74
12	Gujarat	332	338	1.81	328	337	2.74
13	Himachalpradesh	309	320	3.56	310	320	3.23
14	Jammu & Kashmir	342	343	0.29	346	343	-0.87
15	Manipur	302	310	2.65	300	307	2.33
16	Meghalaya	343	354	3.21	343	352	2.62
17	Orissa	300	320	6.67	294	314	6.80
18	Punjab	333	340	2.10	324	341	5.25
19	Rajastan	327	317	-3.06	324	319	-1.54
20	Tripura	334	323	-3.29	334	321	-3.89
	All India	**323**	**333**	**3.10**	**321**	**332**	**3.43**

CONSUMER PRICE INDEX FOR RURAL LABOURERS

Sl. No.	Centre	Base 1986-87 = 100]											
		Jan 02	Feb 02	Mar 03	Apr 03	May 03	Jun 03	Jul 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03
Southern States													
1	Kerala	331	331	330	333	336	342	344	343	340	340	342	341
2	Tamilnadu	352	352	351	355	356	359	354	352	354	348	349	350
3	Anthrapradesh	341	342	344	345	348	353	350	349	348	348	348	349
4	Karnataka	328	329	331	333	335	334	336	336	335	337	338	342
Northern States													
5	Maharashtra	319	320	322	323	326	330	334	334	333	334	333	334
6	Haryana	324	328	331	332	330	333	333	335	338	340	338	340
7	West Bengal	302	303	305	308	312	312	319	321	324	327	329	323
8	Uttar Pradesh	321	326	328	328	325	328	331	331	332	336	333	330
9	Madhya Pradesh	315	318	321	322	325	327	329	327	325	327	324	322
10	Assam	325	326	329	334	336	337	341	340	342	345	345	344
11	Bihar	295	301	307	306	302	303	305	307	307	313	317	314
12	Gujarat	327	328	332	336	337	341	345	345	343	344	340	339
13	Himachalpradesh	313	312	315	321	316	317	323	325	327	325	325	324
14	Jammu & Kashmir	341	340	340	344	346	340	341	338	338	343	338	337
15	Manipur	299	300	302	303	304	306	307	308	309	309	311	307
16	Meghalaya	338	338	338	339	346	343	343	347	346	348	352	350
17	Orissa	293	291	295	297	303	310	314	316	318	322	320	314
18	Punjab	329	330	337	338	336	338	342	342	345	347	344	346
19	Rajastan	323	323	325	326	328	329	329	325	323	320	317	319
20	Tripura	326	317	315	306	306	311	313	314	315	316	314	312
	All India	**322**	**324**	**326**	**328**	**329**	**332**	**334**	**333**	**334**	**335**	**335**	**334**

CONSUMER PRICE INDEX AND % VARIATIONS FOR RURAL LABOURERS

Base 1986-87 = 100]

Sl. No.	Centre	Index for		% Variation	Index for		% Variation
		Nov-02	Nov -03		Dec -02	Dec-03	
	Southern States						
1	Kerala	330	342	3.64	331	341	3.02
2	Tamilnadu	339	349	2.95	354	350	-1.13
3	Anthrapradesh	345	348	0.87	344	349	1.45
4	Karnataka	323	338	4.64	325	342	5.23
	Northern States						
5	Maharashtra	321	333	3.74	319	334	4.70
6	Haryana	331	338	2.11	327	340	3.98
7	West Bengal	313	329	5.11	307	323	5.21
8	Uttar Pradesh	327	333	1.83	322	330	2.48
9	Madhya Pradesh	326	324	-0.61	319	322	0.94
10	Assam	331	345	4.23	329	344	4.56
11	Bihar	302	317	4.97	298	314	5.37
12	Gujarat	334	340	1.80	330	339	2.73
13	Himachalpradesh	314	325	3.50	315	324	2.86
14	Jammu & Kashmir	336	338	0.60	338	337	-0.30
15	Manipur	302	311	2.98	301	307	1.99
16	Meghalaya	340	352	3.53	341	350	2.64
17	Orissa	300	320	6.67	294	314	6.80
18	Punjab	337	344	2.08	330	346	4.85
19	Rajastan	328	317	-3.35	325	319	-1.85
20	Tripura	328	314	-4.27	328	312	-4.88
	All India	**326**	**335**	**2.76**	**324**	**334**	**3.09**

CONSUMER PRICE INDEX FOR INDUSTRIAL & AGRICULTURAL WORKERS

(Kerala State) Base 1998-99=100

Centre	Jan 03	Feb 03	Mar 03	Apr 03	May 03	Jun 03	Jul 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03
Thiruvananthapuram	120	120	121	122	121	122	124	124	124	123	123	124
Kollam	121	121	121	122	122	122	124	124	124	123	124	125
Pathanamthitta	114	114	113	112	111	112	113	113	113	113	115	115
Punalur	116	117	117	117	118	119	120	119	119	118	118	119
Alappuzha	114	114	114	115	115	116	116	115	115	115	116	117
Kottayam	116	116	115	116	117	117	117	117	117	117	118	119
Mundakkayam	115	115	114	114	114	115	116	115	115	115	115	115
Munnar	114	114	113	114	114	115	115	115	115	114	114	114
Ernakulam	116	116	116	117	117	118	118	117	117	117	118	118
Chalakkudy	114	114	114	115	115	116	116	115	115	116	117	118
Thrissur	115	115	115	116	115	116	116	116	116	117	118	119
Palakkad	115	115	115	116	116	116	116	116	116	116	116	116
Malappuram	116	116	116	117	118	119	119	118	118	118	119	120
Kozhikkode	114	114	113	114	115	116	117	116	116	116	117	118
Meppady	114	114	113	113	112	112	113	113	113	113	115	116
Kannur	115	115	115	116	115	117	117	117	117	118	119	120
Kasargod	115	116	116	118	117	119	120	120	120	120	122	123
State	**116**	**116**	**115**	**116**	**116**	**117**	**117**	**117**	**117**	**117**	**118**	**119**

MONTHLY RETAIL PRICES OF CERTAIN ESSENTIAL COMMODITIES FOR THE LAST ONE YEAR

Sl. No	Name of Commodity	Unit	Jan 03	Feb 03	Mar 03	Apr 03	May 03	Jun 03	Jul 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03
A. RICE - OPEN MARKET														
1	Red - Matta	Kg	13.29	13.29	13.30	13.13	13.09	13.59	13.71	13.88	13.83	13.78	13.75	13.85
2	Red - Chamba	Kg	13.69	13.65	13.65	13.51	13.27	13.35	13.89	14.45	14.67	14.42	14.50	14.42
3	White Andra Vella	Kg	12.55	12.60	12.50	12.44	12.57	12.80	13.32	13.17	13.13	13.08	12.96	12.86
B. PULSES														
4	Green gram	Kg	29.54	29.64	29.71	29.89	30.43	30.07	29.96	30.08	29.43	28.07	27.43	27.50
5	Black gram split w/o husk	Kg	28.11	27.14	27.25	27.18	27.04	26.39	26.00	26.27	25.29	25.11	25.46	24.96
6	Dhall(Tur)	Kg	30.19	30.77	30.04	30.08	31.04	31.00	30.81	30.29	30.54	31.65	33.03	33.19
C. OTHER FOOD ITEMS														
7	Sugar(O.M)	Kg.	13.30	13.22	13.15	13.08	13.34	13.32	13.94	15.33	14.64	14.63	14.59	14.02
8	Milk (Cow's)	Ltr.	13.04	13.04	13.04	13.04	13.04	13.04	13.04	13.08	13.04	13.04	13.04	14.00
9	Egg Hen's (White lagon)	Dozen	16.01	16.54	14.61	15.47	15.04	18.09	17.80	15.74	16.59	17.59	18.91	19.32
10	Mutton with bones	Kg	123.57	123.57	125.71	125.71	126.43	125.71	125.71	126.43	128.57	127.86	128.57	128.57
11	Tea (Kannan Devan)	1/2 kg	71.21	71.21	71.21	71.21	71.50	71.14	71.00	71.00	71.50	71.29	71.29	71.29
12	Coffee Powder (Brook Bond Gr.Label)	1/2 kg	68.70	66.70	66.70	66.27	65.71	66.21	66.93	67.43	67.36	67.82	67.54	67.86
D. OIL AND OIL SEEDS														
13	Coconut oil	Kg	58.75	62.55	62.11	59.23	58.30	53.88	59.55	62.90	65.68	70.32	74.32	70.43
14	Groundnut oil	Kg	59.13	60.66	64.96	65.96	65.86	66.37	66.03	66.66	64.98	68.14	68.05	67.95
15	Refined oil(Postman)	Kg.	73.87	75.63	74.28	75.88	76.79	80.21	87.54	83.05	89.77	89.95	90.65	90.15
16	Gingelly oil	Kg.	62.39	64.93	68.34	69.63	70.55	69.68	69.66	69.19	67.02	67.38	68.32	69.55
17	Coconut without husk	100 nos	570.36	591.07	597.50	579.29	569.64	531.43	558.93	584.23	615.36	638.21	711.07	684.29

Monthly retail prices of certain essential commodities for the last one year (Contd.)

Sl. No	Name of Commodity	Unit	Jan 03	Feb 03	Mar 03	Apr 03	May 03	Jun 03	Jul 03	Aug 03	Sep 03	Oct 03	Nov 03	Dec 03
E. SPICES AND CONDIMENTS														
18	Corriandar	Kg.	37.79	38.21	38.54	39.86	43.00	43.89	44.29	43.85	43.43	42.64	40.50	39.00
19	Chillies dry	Kg.	51.29	49.64	50.93	51.29	51.21	51.50	54.21	54.77	54.21	52.50	52.36	53.21
20	Onion small	Kg.	11.36	11.52	11.10	11.41	15.69	15.71	14.71	12.69	11.82	13.85	13.47	13.39
21	Tamarind without seeds loose	Kg.	24.71	23.07	22.71	22.36	22.64	22.57	22.96	23.58	23.86	23.96	24.64	25.14
F. TUBERS														
22	Chenai	Kg.	9.86	11.86	13.07	14.14	15.77	18.50	14.14	11.23	10.57	10.14	10.43	11.71
23	Tapioca Raw	Kg.	5.96	5.96	5.88	6.13	5.96	5.89	5.71	6.27	6.25	5.71	5.68	5.57
24	Potato	Kg.	9.29	8.46	8.36	9.07	10.56	10.46	10.89	10.31	9.36	9.06	9.13	9.67
25	Colocassia	Kg.	11.71	12.43	12.77	14.36	14.85	15.52	16.69	16.09	17.79	15.57	14.79	14.14
G. VEGETABLES														
26	Onion big	Kg.	6.50	5.95	5.75	6.35	7.57	8.79	8.90	8.77	8.95	12.41	12.04	11.34
27	Brinjal	Kg.	8.64	8.57	8.79	9.29	11.14	12.00	12.00	12.00	15.36	12.86	13.57	14.00
28	Cucumber	Kg.	7.00	7.64	6.50	6.43	7.43	8.07	9.36	9.31	7.43	6.57	7.29	7.43
29	Ladies Finger	Kg.	9.50	10.14	13.64	13.50	11.93	11.79	11.00	11.46	11.86	12.93	13.50	12.00
30	Cabbage	Kg	8.43	8.21	7.86	7.93	8.71	15.43	13.43	11.08	10.64	10.14	9.07	9.07
31	Bittergourd	Kg.	12.64	12.21	12.14	13.00	14.36	17.00	17.21	16.00	16.43	13.50	13.86	14.43
32	Tomatto	Kg.	7.21	7.21	7.93	13.00	16.07	12.07	19.43	8.46	11.00	10.36	11.93	14.29
33	Chillies green	Kg.	15.57	13.86	13.50	13.00	13.79	20.29	21.86	12.62	18.36	13.21	13.29	14.07
34	Banana green	Kg.	12.68	13.61	12.57	11.86	11.14	12.43	11.57	11.27	14.93	12.21	14.04	14.50
35	Plantain green	Kg.	8.93	9.36	8.57	8.68	8.29	9.00	9.18	9.08	9.54	9.07	9.39	9.14
H. MISCELLANEOUS ITEMS														
36	Washing Soap (501 Half Bar)	1/2 Bar	7.96	7.95	7.91	7.91	7.91	7.93	7.93	7.93	7.95	7.95	7.95	7.98
37	Toilet Soap Lux	100 gm	11.79	11.96	12.11	12.21	12.25	12.29	12.32	12.32	12.29	12.36	12.32	12.29
38	Toothpaste Colgate	100 gm	29.64	29.64	29.64	29.64	29.29	27.50	26.07	26.07	26.07	26.07	25.71	25.71
39	Cement - Sankar (Ord.Paper Bag)	each	169.05	171.54	173.79	171.14	176.05	176.21	175.46	172.54	160.04	149.79	166.96	177.68

IT Landscape of Key Indian Cities

City	Focus	Prominent firms	Employees
Delhi (includes Gurgaon & Noida)	Call centres, transaction processing, chip design, software	GE, American Express, STMicroelectronics, Wipro Spectramind, Convergys, Daksh, Exl	73,000
Mumbai	Financial research, back office, software	TCS, Mphasis, I-flex, Morgan Stanley, Citigroup	62,050
Bangalore	Chip design, software, bio-informatics, call centres, IT consulting, tax processing	Infosys, Wipro, Intel, IBM, SAP, SAS, Dell, Tisco, TI, Motorola, HP, Oracle, Yahoo, AOL, E&Y, Accenture	109,500
Hyderabad	Software, back office, product design	HSBC, Satyam, Microsoft	36,500
Chennai	Software, transaction processing, animation	Cognizant, Worls Bank, Standard Chartered, Polaris, EDS, Pentamedia	51,100
Kolkata	Consulting, software	PWC, IBM, ITC Infotech, TCS	7,300
Pune	Call centres, chip design, embedded software	Msource, C-DAC, persistent Systems, Zensar	7,300

Source: Nasscom and Fortune.

Pedestal Printers

Printronix Inc. has launched the latest addition to its matrix printer family: the Zero Tear (www.printronix.com/ zerotear) pedestal printers. Printronix created the Zero Tear printers for applications requiring precise accounting of all forms that are simply too expensive to waste. These models (P500ZT) allow users to print from the first to the last line on every form and then tear it off without losing any forms in between. The Zero Tear line matrix printers offer a tremendous consumable cost savings over serial matrix printers.

The Zero Tear's spool ribbons are up to 8 times less expensive than the ribbon catridges found on serial matrix printers. In addition, serial matrix print heads are consumables that need frequent replacements and typically cost $400 or more, plus the serial matrix printer's consumable cost can be up to 12 times more expensive than Printronix's Zero Tear Printer.

For high volume applications, this will give the Zero Tear printers the edge when comparing total cost of ownership. The P5005ZT 500 line per minute (1pm) printer is $5,820, and the P5010ZT 1,000 1pm printer id $8,275.

Configuration management

Atlanta-based Spectrum Software, Inc., a system designer and developer of software productivity tools, has made available its Spectrum SCM 2.0. This product release provides powerful new features unlike any other peer CM solution currently available. Spectrum SCM is a flexible, process based system that can be used to manage the entire project life cycle. Spectrum SCM provides comprehensive source configuration management for any 'e-Asset' from origination through delivery, maintenance and support. Spectrum SCM is the first truly integrated, platform independent, full-featured (Version Control, Issue Tracking, Change Management, Process Management/ Control, Work flow, Release Management, Parallel Development) source configuration management system in the market place that provides full CM functionality with one fully integrated SCM system.

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